

5
INFORMATION UPDATE
TRAFFIC NOISE ASSESSMENT TESTON ROAD
CITY OF VAUGHAN

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated February 14, 2011, from the Commissioner of Transportation Services.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

To provide information on the assessment of noise adjacent to Teston Road, as directed by the Transportation Services Committee at their meeting on June 16, 2010.

3. BACKGROUND

York Region's Traffic Noise Mitigation Policy was updated in 2006 introducing broader eligibility criteria for noise mitigation adjacent to Regional roads

In March 2006, the Region updated its policy for traffic noise mitigation in accordance with Report No. 3 Clause 5 of the Transportation and Works Committee of March 23, 2006: York Region Traffic Noise Mitigation Policy for Regional Roads (Traffic Noise Mitigation Policy). A copy of the approved updated policy is attached (*see Attachment 1*).

As part of the Traffic Noise Mitigation Policy (2006), any road widening projects constructed in 2006 or prior are exempt from the requirements of the new policy. Any projects scheduled for tender in 2007 and beyond are subject to the new policy.

Accordingly, road widening projects tendered in 2006 were designed and constructed in accordance with the old policy. Council's direction; however, was that following construction, staff were to undertake a traffic noise assessment for the project limits in accordance with the Traffic Noise Mitigation Policy (2006). In the event noise mitigation within the project limits was required under the updated policy, staff would implement the new recommendations as part of a subsequent contract. This work would be covered under the Capital Project provision in the Traffic Noise Mitigation Policy.

Noise barriers constructed under the Capital Project provision of the Traffic Noise Mitigation Policy would be constructed only on the outer edge of York Region's road right-of-way. The barriers would be owned and maintained by York Region.

The Traffic Noise Mitigation Policy also provides assistance to residents under the Retrofit Provision for the installation of noise barrier, where warranted and effective, in areas where there are no future capital projects

There are many locations along York Region's roadways where adjacent residential properties are impacted by traffic noise that are not already mitigated through noise barriers. In these situations residents can apply to York Region to assess whether or not noise barriers are warranted. In locations where noise barriers are warranted and would be effective, the residents and York Region would share the costs of the installation of the noise barriers. This work would be done under the Retrofit Provision of the Traffic Noise Mitigation Policy.

Noise barriers constructed under the Retrofit Provision would be constructed outside of the Regional road and totally within the resident property(s). Ownership and ongoing maintenance, including costs, would be the responsibility of the homeowner(s).

The retrofit provisions were developed to address request for noise mitigation for properties immediately adjacent to, and contiguous with, the Regional road right-of-way. The development of these provisions did not, at the time, envision potential requests from owners of properties further removed from the Regional right-of-way.

A figure showing the relative location of the noise barrier under the Retrofit and the Capital Project provisions of the policy is appended to this report (*see Attachment 2*).

Two recent widening projects on Teston Road have been reassessed using the broader eligibility criteria of the 2006 Traffic Noise Mitigation Policy

The following two projects were planned and designed and received Environmental Assessment approval under the old policy and did not qualify for noise mitigation. Despite this, staff have received a number of requests for mitigation from affected residents. A context map showing the two sections of Teston Road and the limits of the EA is appended to this report (*see Attachment 3*).

A. TESTON ROAD – JANE STREET TO KEELE STREET

This section of Teston Road was tendered in 2003 and completed and widened in 2006. Additional street trees were planted in the boulevard in 2006 and 2007; however noise barriers were not warranted

Regional staff have been working with residents backing onto Teston Road between Jane Street and Keele Street over the years to mitigate the effects of the 2005 widening from

two lanes to four lanes, but residents remain concerned about road noise. In April of 2010, Region staff received noise concerns specifically from residents of Medley Court and Bellefontaine Court. A location sketch is appended to this report (*see Attachment 4*)

B. TESTON ROAD – DUFFERIN STREET TO BATHURST STREET

This section of Teston Road was widened from two lanes to three lanes in 2008

In June 2010, York Region received complaints related to traffic noise from the residents at the intersection of Teston Road and Quail Run (500 metres west of Bathurst Street). A location sketch is appended to this report (*see Attachment 5*).

Regional staff retained the help of a noise consultant and the preliminary analysis has been completed

On November 1, 2010, SENES Consultants Ltd. was retained to assist the Region in conducting traffic noise assessments along both sections of Teston Road.

Throughout November and early December 2010, the project team completed the preliminary field work and technical analysis.

Under the Traffic Noise Mitigation Policy, staff have the administrative authority to implement noise mitigation measures if they comply with policy, and only deviations from the policy need Regional Council approval. Accordingly, this report is being presented for information only in response to Transportation Committee's request for an update on our analysis. The results are summarized in Section 4.

4. ANALYSIS AND OPTIONS

A. TESTON ROAD – JANE STREET TO KEELE STREET

Traffic noise from Teston Road between Jane Street and Cranston Park Avenue (west of Keele Street) does not qualify for mitigation under the Capital Project or Retrofit provisions of the new policy; however, this section was assessed to determine if noise mitigation is warranted under the new Traffic Noise Mitigation policy as directed by Transportation Services Committee

Since the tender for the Teston Road widening and reconstruction through this area occurred prior to 2006, the corridor does not qualify for reassessment under the Retrofit Provisions of the new Traffic Noise Mitigation Policy. However, as requested at Transportation Services Committee, to respond to concerns expressed by residents, this

section was assessed against the Retrofit provisions of the new Traffic Noise Mitigation Policy.

Accordingly, with the assistance of SENES Consultants Ltd., consultation with stakeholders took place throughout the detailed traffic noise assessment.

Between Jane Street and Cranston Park Avenue, eight representative receptor locations (outdoor living areas) were selected as the most critical locations in terms of noise exposure from Teston Road and future traffic volume increases to the horizon year of 2031.

Analysis of the eight receptor locations (outdoor living areas) identified only one area (Medley Court) which could possibly benefit from noise mitigation, however this situation is not addressed by current Regional policy

Detailed analysis concluded that the installation of sound barriers is supported at one location (Medley Court) where no existing noise barriers are present. In the vicinity of 38 Medley Court, a unique situation arises: there is an open space owned by the Toronto and Region Conservation Authority between the homes at this location and the Teston Road right-of-way. Although noise barriers are to be built under the Retrofit Provision at the edge of the right-of-way (but along the homeowner's private property), due to the open space separating the homes from the road, noise barriers built at this location would not be effective.

In this unique situation, however the effectiveness of noise barriers on the homeowner's private property, even though this location would not be adjacent to the Teston Road right-of-way, was also assessed, even though this situation is not addressed by current Regional policy.

At 38 Medley Court and the four properties to the west, it was determined that noise barriers are warranted and would be effective. A noise barrier constructed on private property will achieve a reduction in noise of six dBA.

To the east of 38 Medley Court, the properties have already been mitigated from traffic noise through noise barriers constructed at the time of the development of these homes. Residents could benefit from additional tree planting within the conservation lands to provide some additional visual screening. An aerial photo of this location is appended to this report (*see Attachment 6*).

However, because the road project was tendered prior to 2006, this location does not qualify for funding or assistance from York Region under the current Traffic Noise Mitigation policy for the installation of noise barriers or tree planting. To date the results of the traffic noise assessment have not been discussed with the residents.

The remaining seven receptor locations (outdoor living areas) do not qualify for noise mitigation under the Region's Retrofit Provision

In the vicinity of Cooper Creek Court, Ashton Drive, Medley Court and Cranston Park Avenue where existing noise barriers have been installed as part of the land development process, these areas do not qualify for reassessment under the Traffic Noise Mitigation policy.

In the vicinity of Cranston Park Avenue where no noise barriers are present, the current and future predicted noise levels are less than 60 dBA and accordingly these areas do not qualify for mitigation under the retrofit program.

B. TESTON ROAD – DUFFERIN STREET TO BATHURST STREET

Traffic noise from Teston Road between Saul Court (east of Dufferin Street) and Bathurst Street qualifies for noise mitigation under the Region's policy

Since Teston Road widening and reconstruction through this area was tendered in 2006, the corridor does qualify for reassessment under the Capital Project provisions of new Traffic Noise Mitigation Policy. This reassessment work was also part of SENES' detailed traffic noise assessment.

Along Teston Road between Saul Court and Bathurst Street, eight representative receptor locations (outdoor living areas) were selected.

Analysis of the eight receptor locations (outdoor living areas) identified seven locations warranting noise mitigation

With the exception of one location (890 Teston Road), all the other seven receptors exceed 60 dBA for the current and future scenarios. As such, these properties qualify for noise mitigation in the form of noise barriers if they will be effective. That is, the noise barrier will reduce traffic noise by at least six dBA

Analysis of the seven locations warranting noise mitigation concluded that noise barriers would not be effective at reducing traffic noise by at least six dBA

At the seven locations that warrant noise mitigation, the location of the roadway, size of the estate properties and topography is such that mitigation of the traffic noise through installation of sound barriers would not be effective. That is, noise barriers constructed at the property line would not reduce the traffic noise level by at least 6 dBA.

However, because noise mitigation is warranted, in accordance with the Capital Project provisions of the policy, vegetative screening in the form of trees are to be planted in the vicinity of the qualifying properties. This tree planting and vegetation screening is

proposed for the spring of 2011. An aerial photo showing these locations is appended to this report (*see Attachment 7*).

5. FINANCIAL IMPLICATIONS

A. TESTON ROAD – JANE STREET TO KEELE STREET

The total cost of the noise barrier at 38 Medley Court and the four properties to the west is estimated at \$87,000. As the conditions present at this location are not addressed by the current Regional Council approved policy, the costs of construction of such a barrier would remain with the property owners. As such, there are no financial implications to the Region at this location.

In addition, because the location does not qualify for mitigation under the Retrofit, Regional staff are not in a position to provide additional vegetative screening in the open space between the road and the residential properties.

B. TESTON ROAD – DUFFERIN STREET TO BATHURST STREET

The cost of the vegetative screening proposed by Regional staff to be planted between Dufferin Street and Bathurst Street is estimated at \$40,000. This will be funded 100% from tax levy. The screenings are proposed to be planted in 2011.

Sufficient funds to complete vegetative screening between Dufferin Street and Bathurst Street have been included in the draft 2011 10-Year Roads Construction Program.

6. LOCAL MUNICIPAL IMPACT

The widening and reconstruction of the sections of Teston Road between Jane Street and Keele Street, and between Dufferin Street and Bathurst Street have provided significant benefit to our corridor users.

Although noise mitigation through the installation of noise barriers is not feasible at all locations, the Region's policy does provide for the installation of vegetative screening. While the vegetative screening will not reduce traffic noise levels in the outdoor living area, the buffer will provide some aesthetic visual benefits and the perception of separation between the road and the residential properties.

7. CONCLUSION

Traffic noise continues to be one of the most significant concerns expressed by our residents during both the construction of our road projects and general operation of our

road corridors. In response to these concerns, vegetative screening is proposed along the Teston Road boulevard in the vicinity of Quail Run Boulevard.

Regional staff will continue to work with City of Vaughan residents, staff and stakeholders along its Regional corridors to address traffic noise concerns.

For more information on this report, please contact Paul Jankowski, General Manager of Roads at extension 5901.

The Senior Management Group has reviewed this report.

(The seven attachments referred to in this clause are attached to this report.)



STATUS

Council Approved

Y

N

CAO Approved:

Y

N

TITLE: York Region Traffic Noise Mitigation Policy for Regional Roads	NO.: Approval Date: March 23, 2006 Last Updated:
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POLICY STATEMENT:

This policy provides a process for the effective mitigation of traffic noise on Regional Roads.

APPLICATION:

This policy shall be used for noise assessment and mitigation during implementation of Capital Roads Projects, Review and Approval of New Development Applications, Consideration of Retrofit Noise Mitigation and to address potentially unsafe situations of privately owned noise barriers adjacent of public areas on Regional Roads.

PURPOSE:

This policy identifies York Region's requirements for conducting noise assessments, including when and under what conditions mitigation is to be implemented.

DEFINITIONS:

"Ambient or Background" sound level - is the all-encompassing noise associated with a given environment and comprises a composite of sounds from many sources, other than the source of interest, near and far . In the context of this document, the ambient or existing noise level is the noise level which exists at a receptor as a result of existing traffic conditions without the addition of noise generated by the proposed undertaking or the new source of noise.

"Capital Projects" - where capital road construction projects are being undertaken on Regional Roads.

"Development" - development or redevelopment adjacent to Regional Roads.

"dBA" - a unit of measure to quantify noise levels.

Leg – The Energy Equivalent Continuous Sound Level - is the constant sound level over the time period in question, that results in the same total sound energy as the actually varying sound. It must be associated with a time period. *Leq* is a measure of total sound energy dose over a specified time period.

Leq (T): Leq (16 hours), Leq (8 hours), Leq (1 hours) means the A-weighted level of a steady sound carrying the same total energy in the time period T as the observed fluctuating sound. The time period T is given in brackets.

“Mature State of Development” – the future build-out of development that fronts or backs onto the Region’s right-of-way, based on the ultimate population and traffic capacity forecasts as defined in York Region’s Official Plan.

“Noise” - unwanted traffic sound.

“Outdoor Living Area” - means the part of an outdoor area designated or commonly used for private, exclusive and common use that is easily accessible from the building and designed for the quiet enjoyment of the outdoor environment. For the purposes of this policy Outdoor Living Areas (OLA’s) include, but are not limited to, the following:

- Backyards - the area at grade directly behind the dwelling, measured up to 3 m from the back of the dwelling;
- Outdoor Living Areas combined with front yards for innovative or special house designs, if approved by the Local Municipality for location, size, fencing, etc...
- Balconies, provided they are the only OLA for the occupant and meet the following conditions:
 - (a) minimum depth of 3 m (or as set by the local municipality);
 - (b) outside the exterior building facade;
 - (c) unenclosed;
- Common OLA's associated with multi-storey apartment buildings or condominiums;
- Passive recreational areas such as parks if identified by York Region or the local municipality.
- Other noise sensitive applications such as residential developments, seasonal residential developments, hospitals, nursing/retirement homes, schools, day care centers or other non-residential land uses containing noise sensitive areas and spaces as approved by York Region.

“Retrofit” - where no Capital Road Projects are being undertaken adjacent to existing residential areas that may warrant noise mitigation.

“Standard Operating Procedures (SOP’s)” – York Region’s technical guidelines for the assessment and mitigation of noise on Regional Roads.

DESCRIPTION:

TECHNICAL AND DESIGN CRITERIA

1. The following technical and design criteria shall be used in determining noise level predictions and modeling:
 - a) Future noise levels shall be based on the “Mature State of Development”;
 - b) The significant noise impact or change in noise levels attributable to implementation of a road project shall be calculated as the difference in projected noise levels at the start of construction and the projected noise levels at the “Mature State of Development”;

- c) The significant noise impact or change in noise levels for a new development shall be calculated based on the difference between existing noise levels and projected noise levels at the "Mature – State of Development.
- d) Alternative noise mitigation measures shall be considered prior to making the decision to use noise barriers, i.e. pavement types, alternate alignments, landscaped berms, service road concepts, etc. Noise barriers shall only be used as a last resort, where all other mitigation measures are not feasible. Where noise barriers are required, landscaping is also required. Additionally, policies pertaining to community planning and transit objectives must be fully considered during the evaluation of potential noise mitigation solutions;
- e) For Capital Road projects, any mitigation deemed necessary shall achieve a minimum reduction of 6 dBA against the greater of either the objective level Leq 16 hours (55 dBA) or the established ambient noise level at the start of construction.
- f) Any mitigation deemed necessary shall attempt to achieve a minimum reduction of 6 dBA against the objective level (55 dBA), Leq 16 (7:00 – 23:00) and the greater of either the objective level or the established ambient noise level in all cases;
- g) The noise impacts from capital road projects and in retrofit areas, shall only consider the OLA;
- h) Where noise barriers are deemed appropriate they must be continuous across the adjacent residential properties without breaks or discontinuities and with returns along side lot lines where required to ensure effective noise attenuation; and
- i) Noise mitigation must be constructed in accordance with York Region Standards and SOP's.

CAPITAL ROAD PROJECTS

- 2. In connection with the implementation of capital road projects, the following shall be used as a guideline in considering mitigation of noise impacts:
 - a) For projected noise level increases from 0 - 5 dBA on adjacent residential properties, no mitigation be considered unless projected noise levels are greater than 60 dBA (Either at the start of construction or at the mature state of development);
 - b) For projected sound levels at the start of construction greater than 55 dBA, and projected future noise level increases greater than 5 dBA, the feasibility of noise reduction measures shall be investigated where a minimum attenuation of 6 dBA can be achieved;
 - c) If it is deemed that noise mitigation is to be implemented, York Region shall assume the full cost of implementing the noise control measures;
 - d) York Region shall assume the ownership and maintenance of any noise control measures when constructed under the Capital Program;
 - e) Noise mitigation implemented as part of capital road projects will only be permitted along the property line at the extreme outer edge of York Region's ultimate right-of-way or along the flanking ends of the subdivision where required; and
 - f) When noise mitigation is not warranted on the basis of projected noise levels not exceeding 60 dBA, the mitigation may be deferred until noise levels exceed 60 dBA.

DEVELOPMENT

3. In connection with the approval of development applications adjacent to Regional Roads:

- a) Noise attenuation reports in accordance with the York Region Noise Policy and SOP's, approved and recommended by the local municipalities must be provided to York Region during the submission of draft plan of subdivision or prior to Site Plan Approval, in order that noise attenuation measures can be evaluated during review of the draft/site plan;
- b) Alternate methods of reducing the noise impact shall be considered prior to considering noise barriers;
- c) Noise attenuation barriers shall be constructed along the extreme outer edge of the landowners/homeowners property line provided it is a minimum of 2.2 meters in height. However, the Commissioner of Transportation and Works can approve noise attenuation barriers up to a maximum height of up to 3.0 meters in situations where deemed appropriate and where recommended by the local municipality; and
- d) Noise barriers are only to be used as a last resort where no other options are feasible. In these situations enhanced warning clauses shall be provided to warn purchasers including specific maintenance obligations and the municipalities' recourse to take corrective actions, should the owner fail to maintain the noise barriers in a state of good repair.

RETROFIT

4. In connection with the retrofit of existing developed areas adjacent to Regional Roads where no capital road projects are planned and no noise attenuation measures exist, but are requested by residents, the following shall be used as a guideline in considering mitigation of noise impacts.

To be eligible for retrofit the requirements of the Municipal Act must be satisfied as per the following conditions:

1. Existing noise levels are greater than 60 dBA.
2. At least 5 continuous dwellings are affected.
3. The proposed improvement must achieve at least 6 dBA improvement.
4. At least 2/3 of affected residents support application (including the 50% of cost).

In cases where existing noise walls are ineffective due to design deficiencies, they can become candidates for the Retrofit Program if the new mitigation can achieve a recommended benefit of 6 dBA over and above the existing noise barrier and all other existing retrofit conditions are satisfied.

Applications that satisfy retrofit criteria will be ranked, priced and submitted to Council for funding approval as part of the yearly capital budget cycle. Based on approved funding, improvements will be made based on highest ranking. If approved funding is limited, qualified applications not implemented shall be re-budgeted in the next year's budget cycle and implemented based on new rank and approved funding.

EXISTING PRIVATELY OWNED NOISE BARRIERS

5. In connection with severely deteriorated privately owned noise barriers that are located adjacent to the Regional Roads, the following process shall be used in addressing potentially unsafe situations adjacent to public areas:
- a) Potential hazards shall have owners directed by the local municipality as soon as the hazard has been identified by Regional forces to correct the problem within a fixed time period.
 - b) Failure to comply shall result in Regional staff working with Local Municipal staff to have unsafe sections dismantled and have removed materials either disposed of or stockpiled on or adjacent to the owner's property. All costs incurred will be back charged to the homeowner with the assistance of the governing local municipality via the Property Standards Act.

RESPONSIBILITIES:

All administrative and financial procedures shall conform to the Regulations under the Municipal Act and the provisions of this policy.

REFERENCE:

Draft Approval (Transportation and Works Committee Report XX, Clause XX, May XX, 2005)

CONTACT:

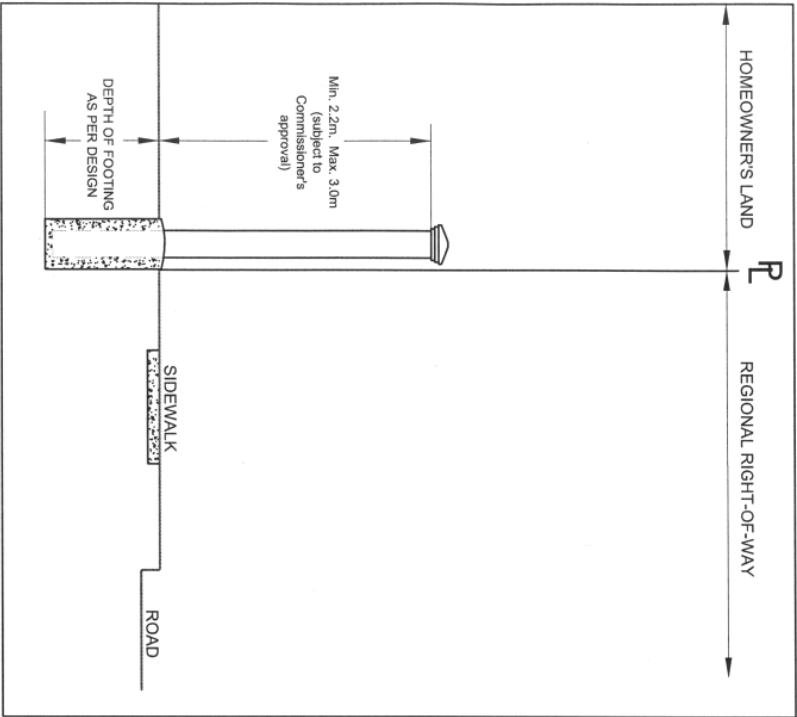
General Manager, Roads - Transportation and Works Department

APPROVAL INFORMATION

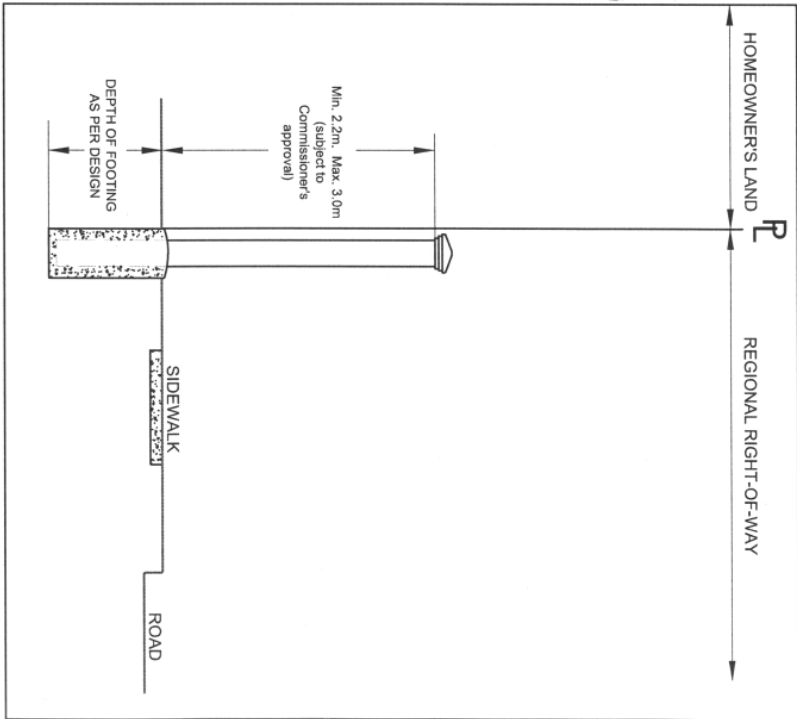
CAO Approval Date: TBD

Committee: Transportation and Works Clause: TBD Report No: TBD

Council Approval: TBD Minute No. TBD Page: TBD Date: TBD



DEVELOPMENT & RETROFIT LOCATION



CAPITAL PROGRAM LOCATION

DESIGN DETAILS:

1. Barrier materials shall be in accordance with the materials approved by York Region.
2. Boulevard grades to be revised to suit the ultimate edge of pavement grades.
4. Positive drainage must be maintained away from the wall at all times.
5. Structural design (footing and posts) must meet wind pressures as per the Canadian Highway Bridge Design code (latest version) and be stamped by a professional engineer.

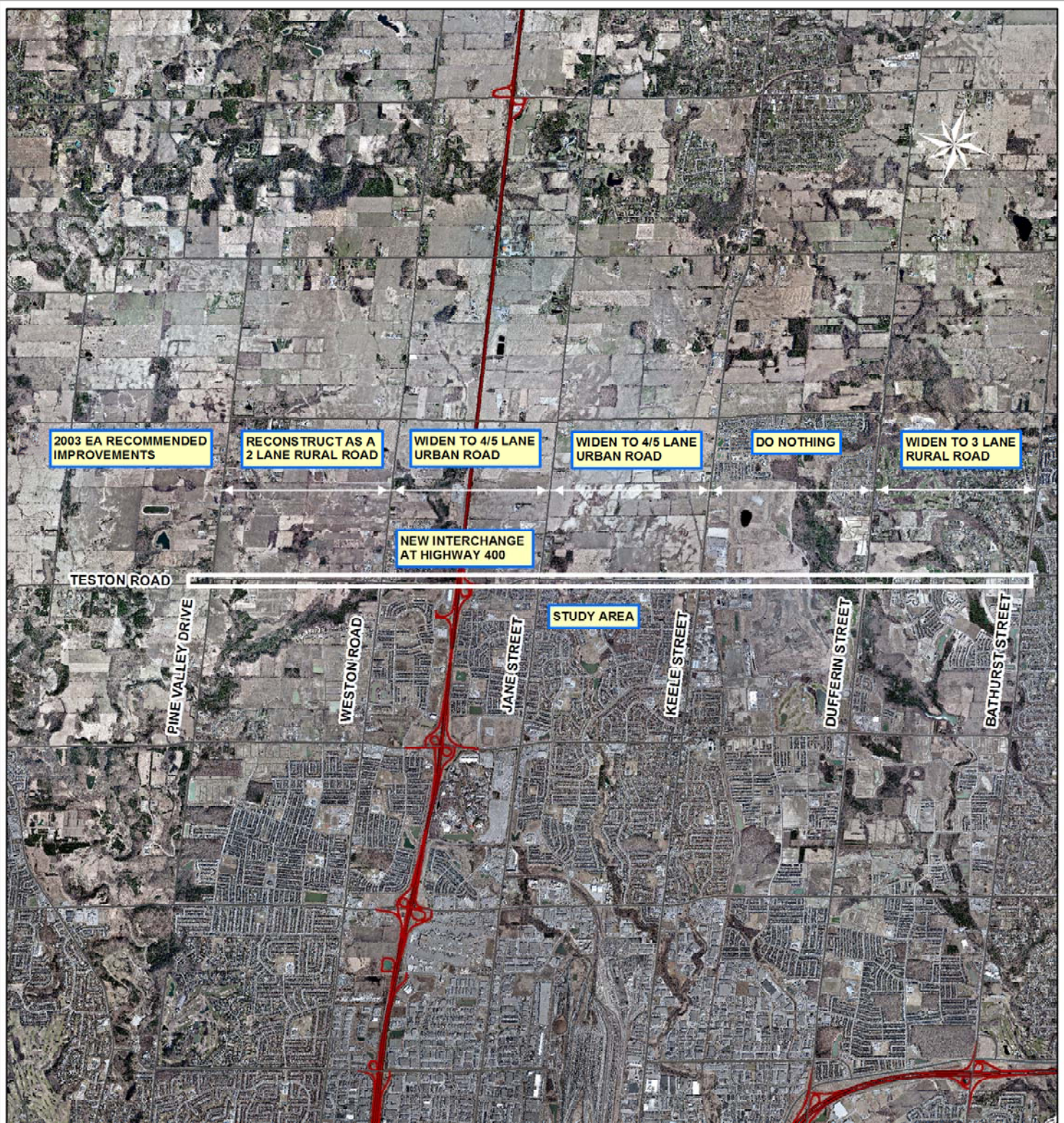
York Region Transportation Services

SHEET A

STANDARD NOISE BARRIER LOCATION

January 2010

DATE



LOCATION PLAN

2003 - TESTON ROAD CLASS EA
 Pine Valley Drive to Bathurst Street
 Original Study Area and Recommendations
 City of Vaughan



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 Roads Branch - Capital Delivery

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0 750 1,500 3,000 Meters



NOISE STUDY LOCATION PLAN

TESTON ROAD
JANE STREET to 100m East of CRANSTON PARK AVENUE
City of Vaughan



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0 45 90 180 Meters



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NOISE STUDY LOCATION PLAN

TESTON ROAD
 SAUL COURT to BATHURST STREET
 City of Vaughan



Transportation Services
 Roads Branch - Capital Delivery



RECEPTOR LOCATIONS
WITHIN STUDY AREA

4. - 38 MEDLEY COURT

TESTON ROAD

MEDLEY COURT

NOISE STUDY LOCATION PLAN

TESTON ROAD
MEDLEY COURT
City of Vaughan

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G:\Transportation\T02 - Design and Planning\8583 Retrofit Noise Mitigation\Teston Road Assignments 1&2\Maps



NOISE STUDY LOCATION PLAN

TESTON ROAD
 QUAIL RUN BOULEVARD
 City of Vaughan



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